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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/811,249	03/26/2004	Christopher J. Clements	25307A	1641

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EXAMINER	
AN, SANG WOOK	

ART UNIT	PAPER NUMBER
1732	

DATE MAILED: 06/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/811,249	CLEMENTS, CHRISTOPHER J.	
	Examiner	Art Unit	
	Sang W. An	1732	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 April 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Knutsson (US 20010011780) in view of Golden et al (US 5317037).

Regarding claim 1, Knutsson teaches a method of forming a preform for a muffler having a predetermined shape (abstract) comprising the steps of: feeding binder and glass fibers into a preform mold having a predetermined shape of a muffler (fig 1); heating said preform mold to a temperature sufficient to melt said binder, said melted binder adhering to said glass fibers to form binder-coated glass fibers; and cooling said preform mold to bind said binder-coated glass fibers together and form said preform (par 0005).

However, Knutsson does not teach using sugar as the binding material. Nevertheless, Golden et al teach using sugar as a binder for forming glass fiber composite (col 3 lines 29-44). Therefore it would have been obvious to one having ordinary skill in the art at the time of invention to modify Knutsson's method of forming a preform to include the use of sugar as the binder in order to produce a biodegradable material (abstract).

Regarding claim 2, Knutsson teaches glass fibers that are continuous glass strands (par 0004).

Regarding claim 3, Knutsson teaches texturizing said continuous glass strands by separating said continuous glass strands into individual glass fibers prior to feeding said continuous glass strands into said preform mold (par 0005 & 0012).

Regarding claim 4, Knutsson teaches that continuous glass strands and sugar are simultaneously fed into said preform mold (claim 2).

Regarding claim 5, Knutsson teaches that the predetermined shape of the preform mold has a shape corresponding to a shape of an automobile muffler (abstract).

Regarding claim 6, Knutsson teaches removing said preform from the preform mold (par 0005).

Regarding claim 7, Knutsson is silent about the sugar binder having a melting point of 130°F or greater. However, Golden et al teach using sugar binder with meting temperature in the range of 248 °F to 347 °F (col 3 lines 29-44). Therefore it would have been obvious to one having ordinary skill in the art at the time of invention to modify Knutsson's method of forming a preform to include sugars having melting point greater than 130°F in order to form a biodegradable material (abstract).

Regarding claim 8, Knutsson teaches that a preform mold is perforated (par 0005).

Regarding claim 9, Knutsson teaches that the heating step comprises passing heated air through said preform mold for a period of time sufficient to at least partially caramelize said Sugar (par 0016).

Regarding claim 10, Knutsson teaches that the cooling step comprises passing cool air through said preform mold (par 0005).

3. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Knutsson (2001/0011780) in view of Hill et al (3286004).

Knutsson teaches a method of forming a preform comprising the steps of: placing a binder on internal walls of a preform mold (par 0005, fig 1); adding continuous glass strands to said preform mold (par 0004 & 0005, fig 1); and curing said binder to bond glass fibers positioned adjacent to said internal walls together and form said preform (par 0005, fig 1), said bonded glass fibers forming an encapsulating shell of bound glass fibers surrounding unbound glass fibers within said preform (fig 1) but does not teach placing the binder prior to adding continuous glass strands to said preform mold.

Nevertheless, Hill et al teach coating the surface of a mold cavity with a thermosetting resin binder and then thereafter spraying reinforcing fibers on top of the binding resin layer (col 2 lines 14-21). Therefore it would have been obvious to one having ordinary skill in the art at the time of invention to modify Knutsson et al's method of forming a preform to include a step of applying the curing binder prior to applying the glass fiber. One would have been motivated to form a fluffy, low density mat containing sufficient resin to act as a binder (col 1 lines 29-30).

Claims 12, 13, 15, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Knutsson (US 20010011780) in view of Hill et al (3286004) as applied above for claim 11, further in view of Golden et al (US 5317037). The teachings

of Knutsson (US 20010011780) in view of Hill et al (3286004) are as described above for claim 11.

Regarding claim 12, Knutsson is silent about the sugar having a melting point of 130°F or greater. However, Golden et al teach using sugar binder with meting temperature in the range of 248 °F to 347 °F (col 3 lines 29-44). Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to use Golden et al's teaching in Knutsson's method of forming a preform in order to form a biodegradable material (abstract).

Regarding claim 13, Knutsson teaches heating the preform mold to a temperature sufficient to at least partially melt the binding material (par 0016), said binding material to adhere to said glass fibers adjacent to said internal walls to form binder-coated glass fibers (par 0005); and cooling said preform mold to bind said binder-coated glass fibers together and form the preform (par 0005).

Regarding claim 15, Knutsson teaches texturizing said continuous glass strands by separating said continuous glass strands into individual glass fibers prior to feeding said continuous glass strands into said preform mold (par 0005 & 0012).

Regarding claim 16, Knutsson teaches removing said preform from said preform mold (par 0005).

6. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Knutsson (US 20010011780) in view of Hill et al (3286004) further in view of Golden et al (US 5317037) as applied above for claims 11, 12, 13, 15, and 16 and further in view

of Kirk (US 6319444). The teachings of Knutsson in view of Hill et al further in view of Golden et al are as described above for claims 11, 12, 13, 15, and 16.

Regarding claim 14, Knutsson does not teach heating the preform mold prior to placing the binder material on the internal walls. However, Kirk teaches preheating the mold prior to the molding process (col 8 lines 1-3). Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to use Kirk's teachings in Knutsson's method of forming a preform in view of Golden et al in order to reduce the wait time required to heat up the mold.

Response to Argument

Applicants argue that Knutsson does not teach placing binder material on the internal wall of a preform mold prior to adding continuous glass strands to said preform mold. Applicant's arguments have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Knutsson and Hill et al.

Applicants argue that Knutsson does not teach bonded fibers forming an encapsulating shell of bound glass fibers surrounding glass fibers within said preform. Applicant's arguments have been fully considered but they are not persuasive. The applicant must clearly define what it means to be bound or unbound. The examiner has interpreted unbound to mean not fully immersed in the binder material. Therefore fiber material on the surface of the muffler preform as shown in figure 1 would be considered "unbound" fiber material encapsulated by "bound/immersed" fiber material. If the applicant means that by being "unbound," the fiber material is not in contact with any

binder material, the examiner cannot foresee how the "unbound" fiber material could be sustained within the preform.

Applicants argue that there is no motivation to combine the sugar binder material taught by Golden and Knutsson's method of making a muffler preform. The examiner disagrees with the applicant. Golden teaches that the object of the invention is to make a biodegradable product that disintegrates in the presence of moisture. However, this is only in the presence of moisture. The examiner would like to point out that the preform taught by Knutsson is encased by a covering as shown in figure 3 of US 2001/0011780. Therefore the covering would substantially keep the preform from coming in direct contact with moisture.

Another point the examiner would like to note is that both the applicant and Golden et al teach using sugar as binder material. The examiner believes that the sugar used by the applicant is also biodegradable. Furthermore, the motivation of the prior art need not be the same motivation as the applicant's reason for use.

Applicants argue that Golden teaches in a passing statement that inorganic fibers such as glass fibers may be employed in a non-preferred embodiment and hence one with ordinary skill in the art would not be led to use glass fiber with sugar binder. The examiner disagrees with the applicant. Although glass fiber is not the preferred embodiment of the invention, Golden et al do teach using glass fiber material. It is unnecessary that the limitation taught by the prior art is the preferred embodiment as long as the reference teaches the limitation.

Applicants argue that Golden teaches away from using glass fiber at column 1, lines 34-36, "mineral fibers, such as glass and asbestos, have been used for many composites, but they are not biodegradable." The examiner disagrees with the applicant. If Golden meant to teach away from using glass fiber as the reinforcing material, he would not have taught it as a possible fiber material in column 3 lines 42-44.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sang W. An whose telephone number is (571) 272-1997. The examiner can normally be reached on Mon-Fri 7 AM - 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Colaianni can be reached on (571) 272-1196. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sang Wook An
Patent Examiner
Art Unit 1732
June 15, 2006

CHRISTINA JOHNSON
PRIMARY EXAMINER
6/21/06